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ABSTRACT

The ten goals of quality education formulated as the basis for the assessment program of the Pennsylvanis Department of Education are presented in detail. This section of Phase II of the Pennsylvania Plan (see TM 000 608) is intended to provide school district personnel with a rationale for measurement within each goal area and a summary of the technical properties for each of the inventories (see TM 000 610-611). (Author/PR)

Educational Quality Assessment

Phase II Findings

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Educational Quality Assessment

Phase II Findings

Section 4

The Ten Goals of Quality Education

Rationale and Measurement

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Pennsylvania Department of Education
December 1970

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Contents

Introduction v

Goal I 1

Goal II 5

Goal III 9

Goal IV 11

Goal V 15

Goal VI 19

Goal VII 21

Goal VIII 26

Goal IX 29

Goal X 33

References 36

Appendices

Introduction to Appendices 37

Grade 5 Summary of EQA Inventories ..... A

Grade 11 Summary of EQA Inventories ..... B

Grade 5 Correlation Coefficients C

Grade 11 Correlation Coefficients ..... D

Grade 5 Percentile Ranks, Means and Standard Deviations ..... E

Grade 11 Percentile Ranks, Means and Standard Deviations ..... F

Introduction

The Pennsylvania Department of Education has developed and is implementing a plan to assess the quality of education in the public schools of the Commonwealth (Campbell and Beers, 1970). The ten goals of quality education form the basis for assessment. Data were collected in the Fall of 1969 from 20,026 5th grade pupils and 17,415 11th grade pupils to develop norms for each of the goals (Hertzog, Beers and Campbell, 1970). In the Fall of 1970 more than 100 school districts participated in assessment.

The ten goals for quality education in Pennsylvania were developed in a joint effort involving the State Board of Education, staff from Educational Testing Service and a citizens' committee called by Governor William Scranton. Educational Testing Service had entered into contract with the State Board of Education to conduct a feasibility study on the assessment of educational quality and had attempted to define with the State Board of Education a broad set of educational goals which include more than the usual academics as represented by the three R's. Following a tentative formulation of these goals, a committee of citizens representing leadership in many areas of the state was convened to review them. The committee was in general agreement that all of the goals were important but it was unwilling to rank them as to order of importance.

Section 4 of *Phase II Findings* is intended to provide school district personnel with a rationale for measurement in each goal area and a summary of the technical properties for each of the inventories. Key items with pupil responses to them are also included. The key items are those which correlate most highly with the total score for each inventory.

The ten goals as they are stated are extremely broad and could include an infinite number of definitions. The rationales for measurement contain only a sample of possible definitions and in turn the inventories measure only a sample of possible behaviors. It is left to school district personnel to further define the goals in light of their own program objectives.

Goal I

Quality Education Should Help Every Child Acquire the Greatest Possible Understanding of Himself and an Appreciation of His Worthiness as a Member of Society

It is widely held that self-understanding is significantly associated with personal satisfaction and with effective functioning. The views which students have of their adequacies and their inadequacies and of their values and their desires can strongly influence their performance in school.

Self-understanding is a personal judgment of worthiness, a subjective experience which individuals convey to others by verbal reports and other overt expressive behaviors. What are the conditions that lead individuals to value themselves and to regard themselves as persons of worth? Coopersmith (1967) discusses four major factors which contribute to the development of self-understanding:

1. We value ourselves as we are valued. The amount of respectful accepting and concerned treatment we receive from parents, teachers and other significant persons can have a profound effect on the amount of worth we ascribe to ourselves.
2. We achieve self-understanding when living up to aspirations in areas we regard as personally significant. All persons do not necessarily interpret indices of success and approval as equally favorable.
3. We perceive success and esteem in light of our personal goals and values.
4. Our manner of responding to devaluation can help us to maintain our self-respect or can lead us to minimize and distort it. The ability to defend the self in the face of negative appraisals helps us to reduce anxiety and maintain personal equilibrium.

Quality education should provide the opportunity for students to achieve confidence in their personal attributes so that they will be able to make decisions, defend their positions and plan ahead. Quality education should provide the opportunity for all students to achieve in their schoolwork and to gain confidence in their abilities to achieve academically. Finally, quality education should provide the opportunity for students to relate successfully to peers, teachers and parents.

MEASUREMENT — GRADE 5

The Goal I inventory contains 53 items. Forty-seven of the items are from the Self-Esteem Inventory (Coopersmith, 1967) and the remaining six items are from the Equality of Educational Opportunity survey (Coleman et al., 1966).

Technical Properties

Reliability. Coefficient alpha = .87.

Item Analysis. Likert analysis reveals that 49 of the items correlate at least .20 with the total score and three of the remaining four items correlate at least .16 with the total score. All but one of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Self-Understanding, supporting the use of a total score for the Goal I inventory. Factor 1 of the principal components solution is explained by 52 of the items with loadings of at least .43 and one item which loads at .33.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Control of Environment	12%	17
2	Self-Confidence in Personal Attributes	8%	10
3	Achieving in School	9%	11
4	Relating to Others	11%	20
	Total variance explained =	40%	

MEASUREMENT — GRADE 11

The Goal I inventory contains 54 items. Forty-seven of the items are from the Self-Esteem Inventory (Coopersmith, 1967) and the remaining seven items are from the Equality of Educational Opportunity survey (Coleman et al., 1966). Except for the one additional Grade 11 item, the 5th and 11th Goal I inventories are identical.

Technical Properties

Reliability. Coefficient alpha = .90.

Item Analysis. Likert analysis reveals that 52 of the items correlate at least .24 with the total score. All of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Self-Understanding, supporting the use of a total score for the Goal I inventory. All of the items have loadings of at least .59 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Control of Environment	18%	25
2	Self-Confidence in Personal Attributes	19%	35
3	Relating to Others	15%	12
4	Achieving in School	12%	12
	Total variance explained =	64%	

The same items tend to load on the same factors at both grade levels. This replication gives validity support to the factor structure.

The majority of 5th grade items load substantially (.40+) on just one factor. At Grade 11, many items load substantially (.40+) on more than one factor.

The Control of Environment factor contains those items in which pupils express confidence or lack of confidence in their capacity to fulfill some of their hopes and ambitions.

Factor 2, Self-Confidence in Personal Attributes, reflects those items in which pupils reveal a sense of adequacy or inadequacy or security or insecurity about themselves in general.

Those items in which pupils express opinions about themselves in relation to teachers and school explain the Achieving in School factor.

Most of the items in the Relating to Others factor refer to relationships with parents. The remaining items reflect pupil judgments about being able to present a favorable impression to others.

Key Items — Grade 5

Item	*Like Me*	*Unlike Me*
E. 38. My parents understand me.	73%	21%
E. 39. There isn't much of a chance for a person like me to succeed in life.	29%	67%
E. 47. I'm proud of my schoolwork.	65%	31%

Key Items — Grade 11

Item	*Like Me*	*Unlike Me*
C. 39. My parents understand me.	52%	42%
C. 40. There isn't much of a chance for a person like me to succeed in life.	10%	85%
C. 48. I'm proud of my schoolwork.	49%	45%

The key item responses illustrate some important differences between 5th and 11th graders. Considerably more 5th graders than 11th graders state that their parents understand them and state that they are proud of their schoolwork. On the other hand, considerably more 11th graders than 5th graders feel there is a chance for them to succeed in life. It may be that most students who do not feel there is much chance for success do not succeed in school and drop out before they reach the 11th grade.

Goal II

Quality Education Should Help Every Child Acquire Understanding and Appreciation of Persons Belonging to Social, Cultural and Ethnic Groups Different from His Own

Quality education should provide the experience for students to respect and achieve an easy interaction with students who differ from themselves in physical characteristics, cultural traditions, economic status, religious beliefs and degree of intellectual competence.

Students should be able to speak with and select as friends students of different origins and beliefs. They should actively seek information and participation which will increase their knowledge about other cultures and other social settings. To evaluate others, students should be helped to use empirical and objective criteria rather than stereotyped and hearsay information.

MEASUREMENT — GRADE 5

The Goal II inventory contains 12 items. Nine of the items were developed by Educational Testing Service (ETS) and later revised by Educational Quality Assessment (EQA) and three of the items were developed by EQA. The three EQA items were not scored for analysis because a substantial number of pupils either omitted them or gave multiple responses.

Technical Properties

Reliability. Coefficient alpha = .77.

Item Analysis. Likert analysis reveals that all nine items correlate at least .39 with the total score and all discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Appreciating Others Who Differ, supporting the use of a total score for Goal II. All of the items have loadings of at least .62 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following three factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Socioeconomic Status	26%	3
2	Religion	25%	3
3	Race	24%	3
	Total variance explained =	75%	

The three hypothesized dimensions of the inventory are supported by the factor structure. Each of the items loads substantially (.75+) on only one factor.

Factor 1 contains those items in which pupils express their feelings about others whose families are poorer than theirs.

Those items in which pupils express their feelings about others whose ideas about God differ explain Factor 2.

Factor 3 contains those items in which pupils express their feelings about others whose skin color differs.

MEASUREMENT — GRADE 11

The Goal II inventory contains 25 items: the nine Grade 5 items, seven additional items developed by ETS and revised by EQA and nine items developed by EQA. Three of the EQA items were not scored for analysis because a substantial number of pupils either omitted them or gave multiple responses.

Technical Properties

Reliability. Coefficient alpha = .88.

Item Analysis. Likert analysis reveals that all 22 items correlate at least .30 with the total score and all discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Appreciating Others Who Differ, supporting the use of a total score for Goal II. All of the items have loadings of at least .71 on Factor 1 of the principal components solution.

The expected dimensions, Socioeconomic Status, Religion and Race, are not discernible in the varimax rotation. The two rotated factors which do emerge can only be explained by a change in response format. Therefore, the principal components solution appears to be the best solution for this inventory.

The differences between the 5th grade and 11th grade factor solutions suggest that whereas 5th graders respond differentially to the three areas of

Race, Religion and Socioeconomic Status, 11th graders do not respond differentially. Those 11th graders who express positive feelings about others who differ in Race, probably will express positive feelings about others who differ in Religion and Socioeconomic Status. On the other hand, 5th graders who express positive feelings about others who differ in Race, may or may not respond positively toward others who differ in Religion and Socioeconomic Status.

To test further this hypothesis, the identical nine items which were rotated for 5th graders were extracted from the 11th grade inventory and rotated. The results support the hypothesis. The three rotated factors which can be defined by the three dimensions in Grade 5 cannot be explained by the three dimensions in Grade 11. Each of the 11th grade rotated factors can be explained by almost all of the nine items. All but one of the items loads substantially (.30+) on all of the factors.

The hypothesis that 5th graders discriminate among the three dimensions whereas 11th graders do not discriminate is supported further by the responses to the key items which follow.

Key Items — Grade 5

		I would like it	*I wouldn't mind it*	*I would rather not*	*I would dislike it*	*I cannot say*
D 6.	How would you feel about sitting in class next to a person whose skin color is different from your own?	15%	60%	6%	4%	11%
D. 9.	How would you feel about sitting in class next to a person whose ideas about God are very different from your own?	9%	46%	10%	11%	20%
D. 12.	How would you feel about sitting in class next to a person whose family is much poorer than yours?	12%	55%	6%	7%	16%

Responses to the key items indicate that whereas 75 per cent of the 5th graders would like or would not mind sitting next to a pupil of a different race, fewer of them (67 per cent) express the same positive attitudes about pupils whose families are poorer and substantially fewer (55 per cent) respond positively toward pupils whose ideas about God differ.

Key Items — Grade 11

		I would like it	*I wouldn't mind it*	*I would rather not*	*I would dislike it*	*I cannot say*
B. 6.	How would you feel about sitting in class next to a person whose skin color is different from your own?	9%	78%	2%	3%	3%
B. 9.	How would you feel about sitting in class next to a person whose ideas about God are very different from your own?	6%	76%	3%	4%	7%
B. 12.	How would you feel about sitting in class next to a person whose family is much poorer than yours?	6%	82%	2%	2%	3%

In contrast to the 5th grade responses, similar proportions of 11th graders respond positively to students who differ in race (87 per cent), in family economic status (88 per cent) and in religion (82 per cent).

Goal III

Quality Education Should Help Every Child Acquire to the Fullest Extent Possible for Him Mastery of the Basic Skills in the Use of Words and Numbers

Mastery of the basic skills in the use of words and numbers is fundamental to achievement in all academic areas. Basic skills include the ability to acquire ideas through reading and listening, the ability to handle mathematical operations and the ability to reason logically and to respect evidence. The level of performance that can be reasonably expected in each of these areas will vary from school to school. However, it is of profound importance that the level of expectation in basic skills for any group of pupils shall not be underestimated or regarded as fixed.

Research has shown that socioeconomic status and potential ability levels account for the most consistent and largest set of common variance in the achievement of basic skills. Quality education should encourage the design of school programs which can be effective in spite of relatively low measured potential and relatively low social status. Moreover, it is plausible, and has been shown to be possible, that not only achievement but also intellectual potential can be modified by school processes. Fruitful program experimentation needs to focus on improving intellectual functioning or upon better utilization of existing intellectual functioning.

MEASUREMENT — GRADE 5

Schools were asked to choose either the Stanford Achievement Test, Intermediate 1, Form W or the Iowa Tests of Basic Skills, Level C, Form 3. A composite basic skills score was derived from the following subtests:

Stanford Achievement	*Iowa Basic Skills*
Word Meaning	Vocabulary
Paragraph Meaning	Reading
Word Study Skills	Language Skills
Arithmetic Computation	Arithmetic Skills
Arithmetic Concepts	
Arithmetic Applications	

MEASUREMENT — GRADE 11

Schools were asked to choose either the Stanford Achievement Test, High School Battery, Form W or the Iowa Tests of Educational Development, Form X-4. A composite basic skills score was derived from the following subtests:

Stanford Achievement	*ITED*
Reading	Correctness and appropriateness of expression
English	Ability to do quantitative thinking
Numerical Competence	Ability to interpret social studies reading
Mathematics—Part A	Ability to interpret literary materials

Goal IV

Quality Education Should Help Every Child Acquire a Positive Attitude Toward School and Toward the Learning Process

Quality education should provide learning experiences which pupils find interesting, valuable, pleasant and active. Quality education should encourage pupils to display positive attitudes toward school assignments and positive attitudes toward the school climate. Pupils should express the interest and the desire to graduate from high school, express the opinion that learning does not end where formal education ends and express the desire to return to some type of educational setting from time to time as adults.

MEASUREMENT — GRADE 5

The Goal IV inventory contains 19 items which were developed by ETS and later revised by EQA. Two of the items were not scored for analysis because they correlated relatively low with the total score and they were not answered in the preferred direction by the highest scoring 27 per cent.

Technical Properties

Reliability. Coefficient alpha = .75.

Item Analysis. Likert analysis reveals that the item to total correlations for 15 of the 17 items range from .22 to .42. The remaining two items correlate with the total score .18 and .19. All of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Interest in School, supporting the use of a total score for Goal IV. All of the items have loadings of at least .36 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following three factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Attitude Toward School Assignments	19%	7
2	Perception of the Learning Process	12%	5
3	Perception of the School Climate	15%	5
	Total variance explained =	46%	

MEASUREMENT — GRADE 11

The Goal IV inventory contains 28 items which were developed by ETS and later revised by EQA. Nineteen of the items are identical to the 5th grade items.

Technical Properties

Reliability. Coefficient alpha = .85.

Item Analysis. Likert analysis reveals that 27 of the items correlate with the total score at least .21 and the remaining item correlates .16 with the total score. All but one of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Interest in School, supporting the use of a total score for Goal IV. All of the items have factor loadings of at least .47 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following three factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Perception of the School Climate	25%	15
2	Attitude Toward School Assignments	19%	14
3	Perception of the Learning Process	14%	8
	Total variance explained =	58%	

For both grades the same items tend to load on the same factors, lending validity support to the factor structure.

All of the 5th grade items load substantially (.40+) on just one factor. At Grade 11, several items load substantially (.40+) on two factors.

The Perception of School Climate factor contains those items in which pupils express attitudes about teachers, about school buildings and about course offerings. This factor is more clearly defined and more strongly explains the variances and covariances for 11th graders than for 5th graders.

The Attitude Toward School Assignments factor contains those items in which pupils express opinions about homework, reading, writing, studying and other class activities.

The Perception of the Learning Process factor contains those items in which pupils express attitudes about teacher methods and school in general.

Key Items — Grade 5

		Almost Always	*Often*	*Some-times*	*Seldom*	*Almost Never*
H. 12.	I like school.	35%	14%	22%	9%	15%
H. 15.	Our school building is nice to be in.	37%	19%	22%	9%	9%

Key Items — Grade 11

		Almost Always	*Often*	*Some-times*	*Seldom*	*Almost Never*
D. 13.	I like school.	20%	15%	35%	8%	15%
D. 18.	Our school building is nice to be in.	26%	18%	28%	9%	13%

		Yes	*Uncertain*	*No*
D. 24.	I would like to quit school now or as soon as I am 16.	3%	5%	87%

Responses to key items indicate that a greater percentage of 5th graders (49 per cent) than 11th graders (35 per cent) like school almost always or often. At both grade levels, almost one-fourth of the pupils state they seldom or never like school. The responses also indicate that 5th graders are more likely than 11th graders to enjoy being in the school building.

Despite the fact that substantial proportions of 11th graders reveal negative attitudes toward school, only 3 per cent indicate a desire to quit.

Goal V

Quality Education Should Help Every Child Acquire the Habits and Attitudes Associated with Responsible Citizenship

Quality education should encourage pupils to be willing to assume responsibility for their actions as well as the actions of the group. Opportunities should be provided for pupils to cooperate and work toward group goals and to demonstrate integrity in dealing with others. Pupils should be given the chance to take the initiative and assume leadership for group action as well as lend support to group efforts as followers.

In order to make appropriate, reasonable decisions, pupils should make every effort to be informed by listening and reading. Schools should provide the opportunity for pupils to voice criticisms in a rational manner and work through group activity to bring about changes. Pupils should be encouraged to take an interest in their communities and become involved in community activities which support their beliefs.

MEASUREMENT — GRADE 5

The Goal V inventory contains 44 items which were developed by the Bureau of Educational Research.

Technical Properties

Reliability. Coefficient alpha = .90.

Item Analysis. Likert analysis reveals that 40 of the 44 items correlate at least .20 with the total score. Two items correlate at least .13 with the total score and the two remaining item to total correlations are below .05. All but one of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Citizenship, supporting the use of a total score for Goal V. All but two of the items have loadings of at least .33 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Personal Responsibility Attitudes	15%	17
2	Initiative in Advocating Change	5%	4
3	Personal Responsibility Applications	16%	19
4	Concern for Democratic Principles	6%	6
	Total variance explained =	42%	

MEASUREMENT — GRADE 11

The Goal V inventory contains 44 items which were developed by the Bureau of Educational Research. The Grade 11 and Grade 5 inventories are identical.

Technical Properties

Reliability. Coefficient alpha = .91.

Item Analysis. Likert analysis reveals that 42 of the 44 items correlate at least .20 with the total score and the remaining two item to total correlations are .16 and .19. All of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Citizenship, supporting the use of a total score for Goal V. All of the items load at least .58 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Personal Responsibility Applications	15%	19
2	Initiative in Advocating Change	9%	4
3	Concern for Democratic Principles	21%	24
4	Personal Responsibility Attitudes	22%	23
	Total variance explained =	67%	

At both grade levels, the same items tend to load on the same factors, lending validity support to the factor structure. However, whereas in Grade 5 most items load substantially (.40+) on just one factor, in Grade 11 several items help to explain more than one factor.

The Personal Responsibility Attitudes factor contains those items in which pupils express attitudes about cheating, breaking rules, finding lost items, helping others and similar conditions.

The Personal Responsibility Applications factor contains those items in which pupils reveal what actions they would take when confronted with conditions which might involve cheating, breaking rules, losing or finding articles and helping others.

The Initiative in Advocating Change factor explains the least amount of variance. Pupils state the degree to which they would voice criticisms in order to bring about changes.

The Concern for Democratic Principles factor is more clearly defined in Grade 11 and explains considerably more of the variances and covariances than it does in Grade 5. Pupils reveal opinions about civil rights, group processes, freedom of speech and other principles.

Key Items — Grade 5

		Never	*Very Seldom*	*Some-times*	*Most of the time*	*Always*
I. 24.	If a store clerk gave me too much change, I would return the extra money.	9%	7%	12%	13%	55%

		Disagree Strongly	*Disagree*	*Neither Agree or Disagree*	*Agree*	*Agree Strongly*
I. 41.	It's okay to break a school rule if everyone else is breaking it.	49%	22%	14%	10%	9%

Key Items — Grade 11

		Never	*Very Seldom*	*Some-times*	*Most of the time*	*Always*
B. 24.	If a store clerk gave me too much change, I would return the extra money.	13%	11%	18%	22%	31%

	Disagree Strongly	*Disagree*	*Neither Agree or Disagree*	*Agree*	*Agree Strongly*
B. 41. It's okay to break a school rule if everyone else is breaking it.	41%	21%	22%	6%	4%

Responses to the key items suggest that considerably more 5th graders (68 per cent) than 11th graders (53 per cent) would return extra change to a store clerk. However, the same proportions (62 per cent) of 5th graders and 11th graders state they disagree with breaking a school rule even if everyone else is doing it.

Goal VI

Quality Education Should Help Every Child Acquire Good Health Habits and an Understanding of the Conditions Necessary for the Maintaining of Physical and Emotional Well-Being

Facts and understandings about the structure and function of the human body, diseases and their prevention, emotional and social adjustment, environmental hazards, posture and body mechanics, dental health, food and nutrition, personal hygiene and first aid and safety are all essential requirements for successful achievement in Goal VI.

Pupils should know how to keep themselves mentally and physically fit in their own interests as well as in the interests of society at large. They should have an awareness of those practices which may be harmful to their physical and mental well-being as well as an awareness of those practices which may be beneficial.

MEASUREMENT — GRADE 5

The Goal VI inventory contains 48 items. Thirty-five of the items were adapted from the Health and Safety Education test, Psychometric Affiliates, and the remaining 13 items were developed by EQA.

Technical Properties

Reliability. Kuder-Richardson = .82.

Item Analysis. Mean difficulty level = .59. All but five of the items correlate at least .20 with the total score. The item to total correlations for the remaining items range from .04 to .14.

Factor Analysis. The principal components solution reveals a general factor, Health Habits, supporting the use of a total score for Goal VI. All of the items load at least .32 on Factor 1.

The principal components solution appears to be the most interpretable solution for this inventory. The factors resulting from the varimax rotation are not interpretable in terms of any hypothesized dimensions.

MEASUREMENT — GRADE 11

The Goal VI inventory is the Health Behavior Inventory, published by California Test Bureau. The 75 items are designed to measure health habits in the following 10 areas: (1) personal health; (2) safety and first aid; (3) family health; (4) infection and disease; (5) mental health; (6) nutrition; (7) community health; (8) exercise, rest and recreation; (9) drinking, smoking and narcotics and (10) dental health.

Technical Properties

Reliability. Kuder-Richardson = .91.

Item Analysis. Mean difficulty level = .59. All but four of the items correlate at least .20 with the total score. The item to total correlations for the remaining items range from .15 to .19.

Key Items—Grade 5

C. 31. Which of the following is *not* likely an effect of smoking?

a. Shortness of breath.	9%
b. Lung cancer.	23%
c. Good appetite.	64%

C. 25. When should boys and girls have a health examination?

a. Only when they are sick.	10%
b. Only when their parents can afford it.	13%
c. At least every three years.	73%

Key Items — Grade 11

A. 36. The best time to visit a dentist is:

a. When you think you need treatment.	5%
b. When you know you need treatment.	4%
c. At regular intervals.	80%
d. At the first sign of a toothache.	3%
e. When you can't stop a toothache.	2%

A. 54. John purchased a second-hand car which was in excellent condition. If you were John, you would consider it poor safety practice to:

a. Keep regular check on the car's mechanical condition.	8%
b. Refuse to pick up hitchhikers.	8%
c. Be courteous to others using the road.	6%
d. Drive consistently at a very low speed.	62%
e. Drive only when alert.	6%

Goal VII

Quality Education Should Give Every Child Opportunity and Encouragement to be Creative in One or More Fields of Endeavor

Definitions of creativity can usually be classified into three categories, depending on whether the emphasis is on the product, the process or the subjective experience. The EQA rationale for Goal VII states that:

1. There is a student potential for creative output. All students have within themselves more or less ability to participate in creative activities and to express their behaviors in a verbal, visual or tangible product. Creative abilities include:

   a. Self-Direction—students are able to complete the task at hand by employing their own resources.
   b. Evaluative Ability—students recognize that their own ideas have worth even if these ideas are not always approved by others and express reasonable balance in opinions of their work.
   c. Flexible Thinking—students are not confined to a single approach to problems. They are willing to consider views different from their own and are not adverse to shifting context.
   d. Original Thinking—students are able to see new relationships, are willing to search for novel approaches and are interested in making new compositions.
   e. Elaborative Thinking—students desire to develop projects beyond minimum requirements and are interested in outcomes and implications.
   f. Willingness to Take Risks—students are not so sensitive to criticisms that they are not able to support their own view; they are willing to accept challenges and are responsive to opportunities to set their own goals.
   g. Ease with Complexity—students like to toy with complex ideas, enjoy coping with knotty problems and are challenged by complications.

2. There are conditions under which creative behavior is more likely to occur. Classroom climates can serve to enhance or inhibit the processes and

experiences of creativity. Depending on the classroom conditions, potential abilities can be thwarted or can thrive.

3. There are characteristics which seem to define creative output, whether the product be tangible or ideational, complete or incomplete. These characteristics include:

a. Newness of Approach—students have accomplished purposeful searches for different pathways to the anticipated product other than those which have been commonly followed in the past.

b. Originality—students have accomplished independent and/or spontaneous, firsthand productions with freshness of aspect or design or newness of style or character.

c. Adaptiveness—students have modified methods, artifacts or processes to serve different purposes, to fit new sets of requirements or to produce different products.

d. Occupational Uniqueness—students have accomplished productions which are not usually expected of high school students at their level of development.

e. Evocation of Feeling and Communication of an Idea—students have accomplished productions which transmit feelings or ideas to others.

When a product displays one or more of these characteristics, recognition is often bestowed.

MEASUREMENT — GRADE 5

The Goal VII inventory contains 45 items developed by the Bureau of Educational Research. Six of the items were not scored for analysis because they correlated relatively low with the total score and did not discriminate between the highest scoring and lowest scoring groups. The inventory includes only items designed to assess creative potential. Grade 5 creative output items are yet to be developed.

Technical Properties

Reliability. Coefficient alpha = .82.

Item Analysis. Likert analysis reveals that 36 of the items correlate at least .18 with the total score and the remaining item to total correlations are .13, .14 and .16. All of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Creative Tendency, supporting the use of a total score for the Goal VII inventory. All of the items have loadings of at least .37 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following two factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Tendency Toward Creative Behavior	17%	19
2	Tendency Away from Creative Behavior	15%	19
	Total variance explained =	32%	

Each of the items loads substantially on just one factor. Factor 1 is explained by those items in which pupils express patterns of flexible thinking, willingness to take risks and curiosity.

Factor 2 is explained by those items in which pupils show signs of inflexible thinking, an unwillingness to take risks and a lack of curiosity.

Key Items — Grade 5

		Strongly Agree	*Agree*	*Uncertain*	*Disagree*	*Strongly Disagree*
F. 24.	I enjoy learning how to do something in a new and different way.	34%	37%	14%	6%	4%
F. 40.	Pictures of grass could be painted any color.	13%	20%	21%	25%	16%

Although 71 per cent of the 5th graders state they enjoy learning in a new and different way, less than one-half of them disagree that grass could be painted any color.

MEASUREMENT — GRADE 11

Two inventories are used to measure in Goal VII. The Creative Output measure contains 116 items which were written by EQA based on a format developed by ETS.

The Creative Potential inventory contains 24 items developed by ETS and later revised by EQA. Four of the items were not scored for analysis because they correlated relatively low with the total score and did not discriminate between the highest scoring and lowest scoring groups.

Technical Properties

Creative Ouput Reliability. Items 1-70. Kuder-Richardson = .90.
Items 71-116. Coefficient alpha = .95.

Item Analysis. Likert analysis for items 71-116 reveals that all items correlate at least .34 with the total score and all discriminate significantly ($p<.01$) between the highest scoring and lowest scoring groups.

Factor analysis was not considered an appropriate form of analysis for the Creative Output inventory. Items 1-70 contain examples of creative activities in a wide variety of fields including the arts, the sciences, the organization of human affairs and the development and exercise of salable skills. Students check whether or not they have been involved in any of these activities. In items 71-116, students indicate whether or not their work has received some type of recognition.

Creative Potential Reliability. Coefficient alpha = .78.

Item Analysis. Likert analysis reveals that 19 of the items correlate at least .20 and the remaining item correlates .10 with the total score. All of the items discriminate significantly ($p<.01$) between the highest and lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Creative Potential, supporting the use of a total score for the Goal VII-P inventory. All of the items have loadings of at least .53 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following three factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Self-Ratings of Creative Tendencies	28%	14
2	Tolerance of Diversity	19%	9
3	Inner Directedness	13%	5
	Total variance explained =	60%	

Factor 1 contains those items in which students evaluate their own capacities for self-direction, flexible thinking and willingness to take risks.

Factor 2 contains those items in which students reveal their degree of openness to new or different ideas.

Factor 3 is explained by those few items in which students express their desire or lack of it to spend some part of their day away from people.

Key Items — Grade 11

E. 13. How creative do you feel you are? How able are you to come up with new ideas that work?

a. Highly creative	7%
b. Somewhat more creative than most	21%
c. Moderately creative	46%
d. Somewhat less creative than most	15%
e. Not very creative	6%

E. 3. How often do you like to fool around with new ideas, even if they turn out to be a total waste of time?

a. Almost always	12%
b. Frequently	30%
c. Sometimes	35%
d. Rarely	12%
e. Never	5%

Goal VIII

Quality Education Should Help Every Child Understand the Opportunities Open to Him for Preparing Himself for a Productive Life and Should Enable Him to Take Full Advantage of These Opportunities

Quality education should provide the opportunity for students to discover the practically unlimited possibilities for continuing self-development in the world of work. Processes rather than specific points in time describe the manner in which individuals move toward vocational maturity.

At the beginning stages of vocational maturity pupils are aware of different kinds of work and workers and have a growing understanding of the relatedness of educational and occupational opportunities. The more vocationally mature students will show involvement in the choice process by actively seeking information, will take personal responsibility for career decisions and finally will base their career choices upon a realistic appraisal of their interests, achievements and aptitudes.

MEASUREMENT — GRADE 5

The Goal VIII inventory is the Vocational Development Inventory Form IV (Crites, 1969). The inventory contains 50 items but 11 items were not scored for analysis because they had relatively low item to total correlations and did not discriminate between the highest scoring and lowest scoring groups.

Technical Properties

Reliability. Coefficient alpha = .77.

Item Analysis. Likert analysis reveals that 30 of the items correlate at least .20 with the total score. The item to total correlations for the remaining nine items range from .11 to .18. All of the items discriminate significantly ($p<.05$) between the highest scoring and lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Vocational Maturity, supporting the use of a total score for Goal VIII. Factor 1 of the principal components solution is explained by all 39 items with loadings of at least .42.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Perception of Work and the Choice Process	13%	20
2	Involvement in the Choice Process	10%	13
3	Judgment and Independence in Decision Making	7%	10
4	Preference for Particular Vocational Aspects	8%	13
	Total variance explained =	38%	

MEASUREMENT — GRADE 11

The Goal VIII inventory is the Vocational Development Inventory Form IV (Crites, 1969), the same inventory used in Grade 5. The inventory contains 50 items and all of the items are scored for analysis.

Technical Properties

Reliability. Coefficient alpha = .89.

Item Analysis. Likert analysis reveals that 46 of the items correlate at least .20 with the total score and the remaining four item to total correlations range from .10 to .19. All but one of the items discriminate significantly ($p<.05$) between the highest scoring and lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Vocational Maturity, supporting the use of a total score for Goal VIII. All of the items have loadings of at least .62 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Involvement in the Choice Process	20%	18
2	Judgment and Independence in Decision Making	15%	19
3	Perception of Work and the Choice Process	23%	33
4	Orientation Toward Helping Others	9%	4
	Total variance explained =	67%	

The first three factors are explained by most of the same items at both grade levels, lending validity support to the factor structure. The 11 additional items in the 11th grade inventory are spread among all four factors.

The Perception of Work and the Choice Process factor is well defined at both grade levels. This factor contains those items in which pupils express attitudes about the relative importance of work, the degree of satisfaction work can bring and the methods of choosing and planning.

The Involvement in the Choice Process factor contains those items in which pupils evaluate the degree to which they are seeking occupational information, thinking about the future and planning future courses of action.

Judgment and Independence in Choosing is defined by those items in which pupils indicate the degree to which they allow parents and others to make their decisions and those items in which pupils make judgments about the merits of work.

Factor 4 for 5th graders is entirely different from Factor 4 for 11th graders. The 5th grade factor, Preference for Particular Vocational Aspects, contains those items in which pupils reveal the degree of importance of such aspects as matching interests to jobs and reality testing. These items are scattered among all of the factors in Grade 11.

Factor 4 in Grade 11, Orientation Toward Helping Others, is defined by those items in which students reveal their attitudes toward work in which helping others is the focal point. These items are not scored in the Grade 5 inventory.

Key Items — Grade 5

		True	*False*
G. 36.	You get into an occupation mostly by chance.	37%	57%
G. 41.	I have little or no idea what working will be like.	48%	48%

Key Items—Grade 11

G. 36.	You get into an occupation mostly by chance.	13%	80%
G. 41.	I have little or no idea what working will be like.	20%	73%

It is expected that 11th graders will have reached a greater degree of vocational maturity than 5th graders. Responses to the key items support this hypothesis. More than one-third of the 5th graders state that one enters an occupation mostly by chance whereas only 13 per cent of the 11th graders respond similarly to this item. Almost three-fourths of the 11th graders in contrast to less than one-half of the 5th graders state they have some idea what working will be like.

Goal IX

Quality Education Should Help Every Child to Understand and Appreciate as Much as He Can of Human Achievement in the Natural Sciences, the Social Sciences and the Arts

Pupils should be encouraged and helped first to gain knowledge about human accomplishments. Possessing knowledge they will then be ready to receive and not to avoid the stimuli that the sciences and arts provide. At the next level, they will be ready to more clearly and consciously perceive this stimuli and will begin to discriminate among art forms. When they reach the next stage of development, they will be ready to respond rather than merely attend to phenomena—they will choose to see a play, to read of a famous scientist or to contemplate the design of a building.

Reaching a higher level of development, they will gain satisfaction in responding. Music will become an emotional involvement. Politics will become a zealous pursuit. Reading will become a vicarious experience.

At the highest level of development, students will exhibit a degree of sensitivity that enables them to differentiate the worthy from the worthless in the multifarious products of civilization—books, motion pictures, radio, TV, music, the visual and performing arts, architecture, industrial design and literature.

To measure achievement in Goal IX, the key words are "understand" and "appreciate." To understand is to perceive the meaning of, to comprehend. Basic to understanding is knowledge, that set of behaviors which emphasizes remembering, either by recognition or recall of ideas.

To appreciate is to exercise wise judgment, delicate perception and keen insight in realizing the worth of something. Appreciation requires voluntary action, emotional response and, at the highest level, involvement and commitment.

MEASUREMENT — GRADE 5

The Goal IX inventory contains 21 items which were developed by the Bureau of Educational Quality Assessment. The first three levels of the *Taxonomy of Educational Objectives: Affective Domain* (Krathwohl, Bloom, Masia, 1956) were used to guide the construction of items. Human accomplishments were divided into seven categories.

Technical Properties

Reliability. Coefficient alpha = .79.

Item Analysis. Likert analysis reveals that the item to total correlations range from .21 to .45. All of the items discriminate significantly ($p<.01$) between the highest scoring 27 per cent and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Appreciating Human Accomplishments, supporting the use of a total score for the Goal IX inventory. Each of the items has a factor loading of at least .40 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Art, Theater and Music	17%	9
2	Science and Literature	17%	8
3	Politics	10%	4
4	Sports	10%	3
	Total variance explained =	54%	

The results of the varimax solution indicate that the seven hypothesized categories of human accomplishments combine to form four dimensions. The three levels of the taxonomy—Receiving, Responding and Valuing—are not discernible in the factor solutions. Subsequent analyses have been conducted to test the existence of the hierarchy (see Campbell and Beers, 1970).

Factor 1 is explained by those items in which pupils express receiving, responding and valuing attitude about art, theater and music activities.

Factor 2 contains those items in which pupils express receiving, responding and valuing attitudes about literature and science.

Factor 3 is explained by those items in which pupils express receiving, responding and valuing opinions about politics.

Factor 4 contains those items in which pupils express receiving, responding and valuing attitudes about sports.

MEASUREMENT — GRADE 11

The Goal IX inventory contains 77 items which were developed by the Bureau of Educational Quality Assessment. As in the construction of the 5th grade inventory, the first three levels of the *Taxonomy of Educational Objectives: Affective Domain* (Krathwohl, Bloom, Masia, 1956) were used to

guide the construction of items. In addition, the 11th grade inventory includes 21 knowledge items. Human accomplishments were again divided into seven hypothesized dimensions.

Technical Properties

Reliability. Knowledge items 1-21. Kuder-Richardson = 82. Items 22-77. Coefficient alpha = .92.

Item Analysis. The mean difficulty level for items 1-21 = .57. Likert analysis reveals that all but two of the items from 22-77 correlate at least .20 with the total score. All but one of the items discriminate significantly ($p<.05$) between the highest scoring and lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Appreciating Human Accomplishments, supporting the use of a total score for Goal IX. All of the items have loadings of at least .53 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following three factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Theater, Art and Valuing	22%	34
2	Sports, Politics and Science	19%	28
3	Music and Receiving	19%	10
	Total variance explained =	60%	

The rotated factors in the Grade 11 inventory are not as clear cut and simple a solution as in the Grade 5 inventory. Many of the items have substantial loadings (.40+) on more than one factor. The hypothesized literature items are divided among all three factors. The most surprising aspect of the rotated factor solution is the coming together of the Valuing items in Factor 1 and the Receiving items in Factor 3 (see Campbell and Beers, 1970). There is some indication, however, that a response set bias may be operating.

Factor 1 is explained by those items in which students express receiving, responding and valuing opinions about theater and art activities. Valuing items in all dimensions also explain Factor 1.

Factor 2 contains those items in which students express receiving, responding and valuing opinions about sports, politics and science.

Factor 3 is defined by those items in which students express receiving, responding and valuing opinions about music. Receiving items in all dimensions also define Factor 3.

Key Items — Grade 5

		Yes	*No*	*Cannot Say*
A. 19.	Would you like to visit a theater to see a play?	80%	8%	8%
A. 17.	Would you like to take part in musical activities?	48%	31%	17%

Key Items — Grade 11

		Yes	*Maybe*	*No*
H. 23.	If you had the opportunity, would you like to attend a symphony concert?	24%	26%	44%

		Agree	*Cannot Say*	*Disagree*
H. 50.	Most works of art are too difficult to understand.	24%	39%	32%

Responses to the key items indicate that the majority of 5th graders are willing to see a play but less than half are willing to take part in musical activities.

Less than one-fourth of the 11th graders state they would be willing to attend a symphony concert and less than one-third disagree that most works of art are too difficult to understand.

Goal X

Quality Education Should Help Every Child to Prepare for a World of Rapid Change and Unforeseeable Demands in Which Continuing Education Throughout His Adult Life Should be a Normal Expectation

Quality education should help students develop attitudes of openness to the possibilities of change—change in their personal world as well as external change. Students should be encouraged to show tolerance for ambiguity and to welcome new experiences. Students should learn to view education as an important and essential activity that does not end when formal schooling ends.

Students should be willing to change certain patterns in their life style if the need arises, should demonstrate a realization of the necessity to plan ahead and should keep informed of the world about them.

MEASUREMENT — GRADE 5

The Goal X inventory contains 29 items which were developed by the Bureau of Educational Quality Assessment.

Technical Properties

Reliability. Coefficient alpha = .79.

Item Analysis. Likert analysis reveals that all of the item to total correlations are at least .20 and all items discriminate significantly ($p<.01$) between the highest scoring and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Preparing for a Changing World, supporting the use of a total score for Goal X. All of the items have loadings of at least .38 on Factor 1 of the principal components solution.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Change in Regulations	13%	9
2	Importance of Education	12%	7
3	Change in Educational Processes	11%	8
4	Change in School Climate	7%	5
	Total variance explained =	43%	

MEASUREMENT — GRADE 11

The Goal X inventory for Grade 11 contains the same 29 items as the Grade 5 inventory.

Technical Properties

Reliability. Coefficient alpha = .81.

Item Analysis. Likert analysis reveals that all of the item to total correlations are at least .22 and all items discriminate significantly ($p<.01$) between the highest scoring and the lowest scoring 27 per cent.

Factor Analysis. The principal components solution reveals a general factor, Preparing for a Changing World, supporting the use of a total score for Goal X. All of the items have loadings of at least .43 on Factor 1.

Varimax rotation resulted in the following four factors:

Factor	*Label*	*Variance Explained*	*Number of Items*
1	Importance of Education	18%	7
2	Change in Regulations	12%	6
3	Change in School Climate	7%	3
4	Change in Educational Processes	24%	13
	Total variance explained =	61%	

The same items tend to load on the same factors at both grade levels, lending validity support to the factor structure.

The Importance of Education factor is well defined in both grades. This factor contains those items in which pupils state whether or not they will have to keep learning in order to maintain a home, family and job.

The Change in Regulations factor includes those items in which pupils express attitudes about changes in school rules, changes in work restrictions and changes in travel regulations.

Change in School Climate is defined by those items in which pupils express opinions about the use of the school by adults and the use of the school 12 months a year.

Change in Educational Processes is defined by those items in which pupils express opinions about learning in out-of-school settings and learning by many and varied methods.

Key Items — Grade 5

		I like it	*I cannot say*	*I don't like it*
B. 11.	In 1989 there will be no attendance rules. Pupils can use the school building as many days each year as they wish. Pupils can come and go any time.	44%	15%	37%
B. 42.	In 1989 there will be no required subjects. Pupils can take any subjects they wish to take.	54%	16%	24%

Key Items — Grade 11

		I accept it	*I cannot say*	*I do not accept it*
I. 11.	In 1989 there will be no attendance rules. Pupils can use the school building as many days each year as they wish. Pupils can come and go any time.	35%	12%	46%
I. 12.	In 1989 there will be no required subjects. Pupils can take any subjects they wish to take.	53%	12%	29%

Responses to the key items indicate that while 44 per cent of the 5th graders would like the idea of having no school attendance rules, only 35 per cent of the 11th graders are willing to accept the idea. More than half of both 5th graders and 11th graders favor the idea of having no required subjects.

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Introduction to the Appendices

Appendix A is a summary of measurement information for Grade 5. "Section" refers to that particular section of the Pennsylvania Pupil Questionnaire which contains the items. The dimensions are those which were defined through factor analysis.

Appendix B is a summary of measurement information for Grade 11. "Section" refers to that particular section of the Pennsylvania Student Questionnaire which contains the items. The dimensions are those which were defined through factor analysis.

Appendix C is the matrix of correlations between the inventories based on mean scores for 355 elementary schools.

Appendix D is the matrix of correlations between the inventories based on mean scores for 73 high schools.

Appendix E contains state school norms for each goal in percentile ranks. The norms are based on mean scores for 355 elementary schools.

Appendix F contains state school norms for each goal in percentile ranks. The norms are based on mean scores for 73 high schools.

APPENDIX A

Grade 5 Summary of EQA Inventories

Goal	Section	Number of Items Scored	Reliability	Range of Scores Possible	Dimensions
I	E	53	.87	53-106	1. Control of Environment 2. Personal Attributes 3. Relating to Others 4. Achieving in School
II	D	9	.77	9-45	1. Race 2. Religion 3. Socioeconomic Status
III	Stanford or Iowa	200+	.90+	200-800	Words and Numbers
IV	H	17	.75	17-85	1. Attitude Toward School Assignments 2. Perception of the Learning Process 3. Perception of the School Climate

V	I	44	.90	44-220	1. Personal Responsibility Attitudes 2. Initiative in Advocating Change 3. Personal Responsibility Applications 4. Concern for Democratic Principles
VI	C	48	.82	0-48	Health Knowledge
VII	F	39	.82	39-195	1. Tendency Toward Creative Behavior 2. Tendency Away from Creative Behavior
VIII	G	39	.77	39-78	1. Perception of Work and the Choice Process 2. Involvement in the Choice Process 3. Judgment and Independence in Decision Making 4. Preference for Particular Vocational Aspects
IX	A	21	.79	21-63	1. Art, Theater and Music 2. Science and Literature 3. Politics 4. Sports
X	B	29	.79	29-145	1. Change in Regulations 2. Importance of Education 3. Change in Educational Processes 4. Change in School Climate

APPENDIX B

Grade 11 Summary of EQA Inventories

Goal	Section	Number of Items Scored	Reliability	Range of Scores Possible	Dimensions
I	C	54	.90	54-108	1. Control of Environment 2. Personal Attributes 3. Achieving in School 4. Relating to Others
II	B	22	.88	22-110	Appreciating Others Who Differ
III	Stanford or Iowa	200+	.90+	200-800	Words and Numbers
IV	D	28	.85	28-140	1. Attitude Toward School Assignments 2. Perception of the Learning Process 3. Perception of the School Climate
V	F	44	.91	44-220	1. Personal Responsibility Attitudes 2. Initiative in Advocating Change 3. Personal Responsibility Applications 4. Concern for Democratic Principles

VI	A	75	.91	75-150	Health Knowledge
VII-P	E	20	.78	20-100	1. Self-Ratings of Creative Tendencies 2. Tolerance of Ambiguity 3. Inner Directedness
VII-O	J	116	.93	116-314	Creative Output
VIII	G	50	.89	50-100	1. Perception of Work and the Choice Process 2. Involvement in the Choice Process 3. Judgment and Independence in Decision Making 4. Preference for Particular Vocational Aspects
IX	H	77	.87	77-210	1. Theater and Art 2. Sports, Politics and Science 3. Music
X	I	29	.81	29-145	1. Importance of Education 2. Change in Regulations 3. Change in School Climate 4. Change in Educational Processes

APPENDIX C

Grade 5 Correlation Coefficients Between the Phase II Inventories for 355 Schools*

Inventory	*LPL*	*I*	*II*	*III*	*IV*	*V*	*VI*	*VII*	*VIII*	*IX*	*X*
Level of Previous Learning	X										
I Self-Understanding	.337	X									
II Others Who Differ	.469	.298	X								
III Basic Skills	.854	.410	.493	X							
IV Interest in School	.101	.413	.376	.160	X						
V Citizenship	.479	.446	.530	.553	.523	X					
VI Health Habits	.727	.413	.535	.795	.185	.643	X				
VII Creativity	.557	.452	.582	.619	.508	.785	.668	X			
VIII Vocational Development	.581	.356	.413	.599	.107	.446	.565	.544	X		
IX Human Accomplishments	.043	.170	.243	.109	.373	.321	.173	.323	.028	X	
X Changing World	.084	.059	.249	.034	.142	.160	.078	.178	.004	.259	X

*A correlation of .100 is significant at the .05 level.
A correlation of .138 is significant at the .01 level.

APPENDIX D

Grade 11 Correlation Coefficients Between the Phase II Inventories for 73 Schools*

Inventory	LPL	I	II	III	IV	V	VI	VII-P	VII-O	VIII	IX	X
Level of Previous Learning	X											
I Self-Understanding	.164	X										
II Others Who Differ	.525	.282	X									
III Basic Skills	.915	.162	.477	X								
IV Interest in School	.028	.399	.352	.073	X							
V Citizenship	.162	.022	.436	.195	.632	X						
VI Health Habits	.585	.085	.470	.609	.360	.502	X					
VII-P Creative Potential	.462	.396	.357	.463	.140	−.079	.068	X				
VII-O Creative Output	−.240	.033	−.192	−.280	−.087	−.271	−.417	.288	X			
VIII Vocational Development	.633	.154	.607	.633	.207	.427	.614	.343	−.226	X		
IX Human Accomplishments	.534	.285	.655	.538	.521	.498	.529	.309	−.238	.482	X	
X Changing World	.408	−.076	.368	.456	−.008	.139	.271	.287	.005	.289	.418	X

*A correlation of .230 is significant at the .05 level.
A correlation of .300 is significant at the .01 level.

APPENDIX E

PENNSYLVANIA SCHOOL NORMS-GRADE 5

DBG8-222 (10/70)

	Percentile Rank	INSTRUMENT										Percentile Rank
		SELF – UNDERSTANDING	UNDERSTANDING OTHERS	BASIC SKILLS	INTEREST IN SCHOOL	CITIZENSHIP	HEALTH HABITS	CREATIVITY	VOCATIONAL DEVELOPMENT	APPRECIATING HUMAN ACCOMPLISHMENT	PREPARING FOR A CHANGING WORLD	
PERCENTILE DISTRIBUTION	Above											Above
	95	90.95	34.75	556	62.75	171.12	31.96	145.67	62.57	54.21	108.80	95
	90	89.94	34.23	546	61.88	168.65	31.16	144.46	61.87	53.76	106.52	90
	85	89.19	33.82	537	61.15	167.22	30.54	143.28	61.42	53.33	105.07	85
	80	88.74	33.59	531	60.70	166.37	30.23	142.34	61.14	53.00	104.19	80
	75	88.32	33.36	526	60.25	165.53	29.91	141.48	60.87	52.66	103.31	75
	70	87.94	33.12	520	59.82	164.69	29.59	140.62	60.63	52.47	102.63	70
	65	87.64	32.92	516	59.51	163.85	29.29	139.88	60.46	52.31	102.03	65
	60	87.35	32.73	512	59.21	163.03	29.02	139.20	60.29	52.16	101.43	60
	55	87.06	32.54	508	58.90	162.21	28.75	138.53	60.12	52.00	100.84	55
	50	86.78	32.34	504	58.60	161.39	28.46	137.85	59.94	51.85	100.34	50
	45	86.50	32.17	500	58.28	160.57	28.21	137.17	59.76	51.69	99.85	45
	40	86.22	32.00	495	57.96	159.40	27.85	136.49	59.57	51.52	99.36	40
	35	85.94	31.83	489	57.64	158.01	27.48	135.80	59.38	51.36	98.87	35
	30	85.65	31.66	483	57.32	156.62	27.11	135.12	59.19	51.19	98.37	30
	25	85.37	31.44	478	56.96	155.12	26.67	134.18	58.95	51.03	97.81	25
	20	85.09	31.12	472	56.43	153.61	26.19	133.17	58.63	50.73	97.26	20
	15	84.80	30.80	466	55.89	151.79	25.68	132.09	58.32	50.42	96.70	15
	10	84.20	30.28	455	54.98	149.57	24.91	130.56	57.81	50.03	96.03	10
	5	83.31	29.64	440	53.36	146.40	23.73	128.06	57.18	49.46	94.10	5
	Below											Below
MEAN		86.90	32.33	501	58.45	160.25	28.20	137.64	59.90	51.80	100.76	
STANDARD DEVIATION		2.21	1.56	035	2.78	7.49	2.44	5.32	1.60	1.60	4.57	

APPENDIX F

PENNSYLVANIA SCHOOL NORMS - GRADE 11

DEBE-226 (10/70)

PERCENTILE DISTRIBUTION	Percentile Rank	INSTRUMENT											Percentile Rank
		SELF – UNDERSTANDING	UNDERSTANDING OTHERS	BASIC SKILLS	INTEREST IN SCHOOL	CITIZENSHIP	HEALTH HABITS	CREATIVE POTENTIAL	CREATIVE OUTPUT	VOCATIONAL DEVELOPMENT	APPRECIATING HUMAN ACCOMPLISHMENTS	PREPARING FOR A CHANGING WORLD	
	Above												Above
	95	91.59	94.73	535	99.42	175.86	126.64	62.95	141.33	85.36	165.05	110.03	95
	90	90.79	93.86	524	97.77	173.69	125.90	62.29	139.97	84.99	163.20	109.12	90
	85	90.41	93.14	521	96.66	172.45	125.23	61.89	139.28	84.73	161.92	108.50	85
	80	90.18	92.84	518	95.54	171.78	124.65	61.69	138.83	84.56	161.36	108.14	80
	75	89.96	92.55	515	94.84	171.10	124.19	61.48	138.38	84.39	160.81	107.78	75
	70	89.74	92.26	512	94.39	170.43	123.73	61.28	137.94	84.22	160.27	107.41	70
	65	89.56	91.95	507	93.95	169.68	123.26	61.06	137.49	84.10	159.80	107.04	65
	60	89.38	91.63	500	93.50	168.89	122.62	60.82	137.05	83.99	159.33	106.65	60
	55	89.20	91.31	496	93.11	168.10	121.95	60.58	136.70	83.87	158.86	106.26	55
	50	**89.02**	**91.10**	**494**	**92.78**	**167.38**	**121.41**	**60.35**	**136.46**	**83.76**	**158.42**	**105.87**	**50**
	45	88.82	90.90	492	92.44	166.75	121.06	60.09	136.21	83.64	157.98	105.50	45
	40	88.61	90.69	490	92.11	166.12	120.71	59.84	135.96	83.46	157.54	105.13	40
	35	88.41	90.48	487	91.78	165.43	120.35	59.58	135.72	83.26	157.11	104.77	35
	30	88.20	90.25	485	91.44	164.77	120.00	59.31	135.47	83.06	156.69	104.41	30
	25	87.88	89.96	482	90.96	163.93	119.50	59.03	135.14	82.87	156.29	103.93	25
	20	87.52	89.67	478	90.48	163.07	118.96	58.75	134.82	82.69	155.88	103.32	20
	15	87.13	89.38	473	90.00	162.16	118.41	58.43	134.49	82.51	155.47	102.72	15
	10	86.71	88.79	465	89.36	161.11	117.63	58.09	134.16	82.07	154.61	101.94	10
	5	86.19	88.11	453	88.02	160.06	116.77	57.68	132.34	81.33	153.49	100.97	5
	Below												Below
MEAN		88.94	91.30	497	93.28	167.64	121.56	60.31	136.83	83.51	158.71	105.71	
STANDARD DEVIATION		1.58	1.91	027	3.67	5.18	3.29	1.69	2.69	1.21	3.35	2.98	